

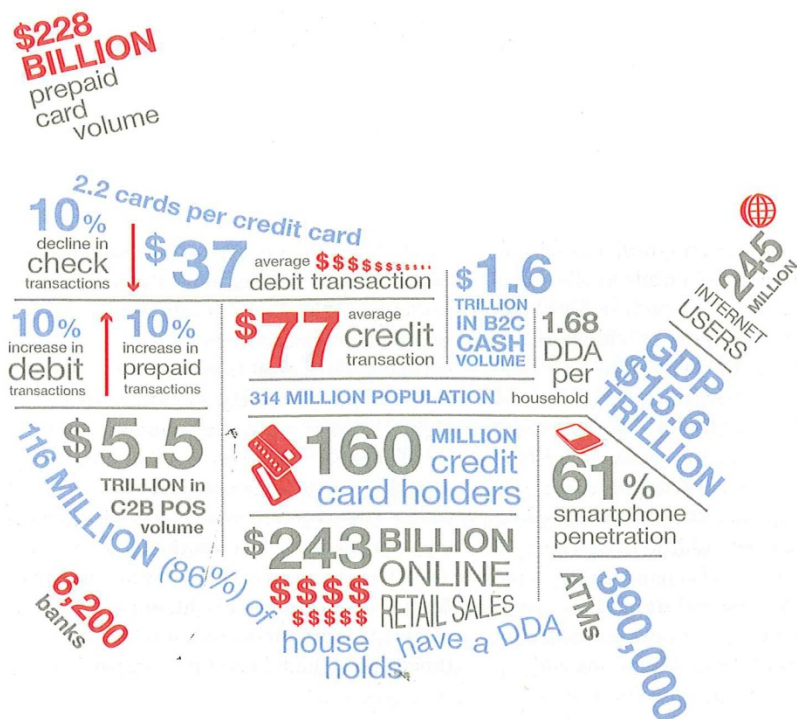


Payment System Improvement-Consultation Paper - Question Response

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This is a series of questions put forth by the Federal Reserve Bank seeking input to the evolution of the U.S. payment system and responses provided by the author are opinions based on experience only.

**The Federal Reserve Banks
Payment System Improvement-Public Consultation Paper**



The United States is the largest payments market in the world, with more than \$300 billion in industry revenues.

Source: McKinsey Payments Practice; World Bank; Findex Database; World Fact Book; Nilson report

General Questions

Q1. Are you in general agreement with the payment system gaps and opportunities identified above?

In general the Fed position paper has effectively captured the gaps in the U.S. retail payment systems and the approach to both begin and end with the consumer (end-user) experience is key to evolving the payment system to one that meets the needs of all stakeholders, provides choice, has global interoperability and is secure while priced economically fair for the value provided to each stakeholder.

In doing this the Fed Banks should not impede the free market but rather allow the market to evolve (no price fixing) while continuing its oversight role to ensure efficiency, accessibility and security of the U.S. payment system.

While no one new payment innovation has yet to gain a mass market penetration, it is because in part due to no one new technology being significantly different in terms of faster, cheaper or inclusive than the traditional payment forms. It is also because unlike the traditional payments systems that have rules – a legal framework -to protect each stakeholder and engender a foundational level playing field (sense of equitable fairness), the Federal Reserve has not kept pace with the new payment innovations

being introduced into the payment marketplace by non-bank innovators who deliver payment services to the public.

Other GAPS that exist not mentioned include:

The Federal Reserve Banks and Federal Reserve Board's role in the U.S. payment system as new payment innovations have been introduced into the marketplace has shifted to the private sector innovators who developed or introduced these payment mechanisms (Card associations, non-bank innovators, mobile and telephone carriers, mobile providers, etc.) leading to various pricing models emerging centered around various stakeholder business model objectives (par versus ad valorem pricing). This has reached a tipping point where public outcry has forced Congress to pass legislation (Dodd Frank) instructing the Federal Reserve Board to step in and determine fair pricing. Unfortunately the new rules of fair play has lead to many unintended consequences and resulted in governmental price fixing within markets as opposed to allowing the free markets to evolve.

The Federal Reserve Board to this point has decided not to keep up with the pace of innovation and the ability to create the governance rules and security standards that layout the foundation (legal framework) around emerging payment systems and options that would set the foundation for greater movement toward ubiquity (inclusiveness) and usage. The existing legal framework for legacy payment systems doesn't apply to the new innovations in mobile and virtual online payments being developed.

While public confidence in the payment system is very high for the traditional forms of payment, the rules of engagement or fair play has not kept up with the pace of emerging payment technology developments. Consumers have no confidence in the safety and security of some of these emerging technologies (mobile etc.). The Fed is in a precarious role, a leadership role, as being the safe keeper of the national payment system. It should share information and data to help spur continuous innovation in the marketplace but at the same time maintain and protect information/data to continue fostering confidence in the traditional U.S. payment systems while instilling confidence in emerging payment forms that are beginning to garner a increasing reach or that best solve end user problems.

The mission of the Fed should be broadened to encompass the exchange of all forms of value including that stored on cards and in electronic form such that the security of value exchange and the public confidence of the same are an absolute in our society.

Q2. Are you in general agreement with the desired outcomes for payment system improvements over the next 10 years? Please explain, if desired.

Certainly the five desired outcomes-Industry/Government Collaboration, Payment System Ubiquity, Reduction of Societal Payment Costs, Consumer (User) Payment Choices and Confidence/Security in the U.S. Payment System envisioned by the Federal Reserve are key to the evolutionary development and movement to a next generation digital payment system.

Where there is disagreement is in the idea that a near-real-time environment is the appropriate target. In today's digital world, of mobile and information at the speed of light, a near real-time payments

infrastructure is not good enough. The societal need is the ability to conduct commerce in real-time at both a national and global scale. This is evidenced by the payment innovation that has evolved and by our trading partners globally who have already moved to a real-time payments infrastructure (European Union, etc.)

What other outcomes should be pursued?

Additional outcomes the Federal Reserve working collaboratively with the payment industry participants should seek to achieve include:

1. A new definition of the role of the Federal Reserve Banks and the Federal Reserve Board in the U.S. payment system that clearly defines the oversight, governance and operational roles (if any) they will play in this new digital. Today the Federal Reserve Banks play the Interbank Settlement and Clearing role for the Cash, Check, ACH, Wire, CHIP, and Securities Exchange payment forms only and the Federal Reserve Board maintains oversight establishing the Standards (rules). The private sector carries out these roles for the EFT payment forms with little government involvement until public conflicts arise or markets begin to fail which is evidenced by the recent debit card amendment to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010.
2. As the central operator in the clearing and settlement of checks, the Fed should take the lead role in shifting the remaining 6 billion plus B2B, B2G and B2C checks to an electronic presentment, settlement and clearing form. The outcome should be transition of these payments by the end of the decade. They led the adoption of end to end check image exchange in the P2C, P2B and P2G environment where 98% plus of Fed participating FI's today use some form or all forms of imaging to exchange checks, their leadership can be effective in reducing checks in the business world as well and will be necessary to direct End Users to the emerging more efficient and speedier payment forms.

Q3. In what ways should the Federal Reserve Banks help improve the payment system as an operator, leader and/or catalyst?

The exchange of value is one of the few necessary utilities that allow for an orderly society. Like traditional utilities such as water and electricity, any interruption in delivery, even on a temporary basis creates chaos. The chaos of a power outage would be a speed bump when compared to an interruption in the ability to exchange or access value. As the largest non-cash payment system operator for ACH, Wire, CHIPS and Checks, the Federal Reserve Banks are in the best position to not only serve as enablers of payments innovation, but to own and operate the same. The Federal Reserve, as an aggregator suggests the ability to bring together all parties needed to quickly catch the U.S. payment system up to the rest of the world. The U.S. payment system grossed over \$300 billion in revenues annually making it the largest payments market in the world and the obvious choice to be the leader in establishing standards of security and operation.

Ubiquitous near-real-time payments

Q4. In discussions with industry participants, some have stated that implementing systems for near-real-time payments with the features described in the second desired outcome (ubiquitous participation; sender doesn't need to know the bank account number of the recipient; confirmation of good funds is made at the initiation of the payment; sender and receiver receive timely notification that the payment has been made; funds debited from the payer and made available in near real time to the payee) will require coordinated action by a public authority or industry group. Others have stated that current payment services are evolving toward this outcome and no special action by a public authority or industry group is required.

i. Which of these perspectives is more accurate, and why?

Both may be accurate, it is too early to tell. Current payment services are evolving toward this outcome such as The Clearing House Secure Cloud initiative and the proposed tokenization standards being collaboratively developed by a partnership of card associations/networks (Visa, MasterCard and American Express). These initiatives are aimed at eliminating the need to know account number information for the sending and receiving of payments, validation of good funds and near real-time payment delivery.

New emerging innovations that both seek to leverage existing payments infrastructures (rails) as well as create new payment systems are being designed around faster real-time or near real-time movement of money and exchange of value. Such as those systems and product initiatives of the following entities:

- **PayPal** - coined the 5th network after Visa, MC, Discover, Amex,
- **NACHA** – had a working group to change ACH rules to same day settlement of credits, it failed and now they are back to the drawing board. August 2012
- **FED** – Introduced same day settlement for debits in 2010 and expanded it to credits in April 2013. Yet it only has 31 banks participating.
- **PayNet** – FIS real-time payment network for non-card payments. New network designed to process non-card payments through the NYCE debit switch. Transactions settle near-instantaneous.
- **Dwolla** – FiSync – lets users instantly transfer funds from bank accounts to their Dwolla account.
- **SpotPay** – Fiserv soon to be launched mobile payments acceptance service that runs over its Accel/Exchange debit network.
- **MCX** – Consortium of merchants developing a new payment network to displace traditional card networks.

The current payment services are not evolving towards a unified method or solution and the collective-action required by all industry participants make such a cooperative endeavor effectively impossible to be achieved by relying on the private sector. The Federal Reserve Banks who have

historically maintained inter-bank clearing and settlement services oversight over the traditional non-cash payment types (Check, ACH, Wire (RTGS), has not taken any type of role in the payment systems developed since. The 2010 Durbin amendment shifted the Federal Reserve Banks operational payment system oversight powers to the Federal Reserve Board of Governors which suggest that it would be unlikely that the FRB Board would take up the challenge of evolving the national payment system unless mandated to do so by Congress.

The formation of a public authority was very effective in 1974 when the U.S. Congress established the National Commission of Electronic Funds Transfer that guided the evolution of the payment system for decades following. A congressional mandate to form a similar body whose representatives reflect a diversified group of payment system participants across the payment industry to also include non-bank providers of payment products and services to the public will be required to bring about rapid change. The Federal Reserve Banks and Board are the obvious choice to both facilitate the process and serve as the central operator.

ii. What other perspective(s) should be considered?

Real-time payments meaning presentment, clearing and settlement exists today in Mexico and the UK. In Mexico, the central bank has operated the real-time payment system call SPEI since 2004. In the UK, a privately operated system called Fast Payments has been available since 2008. Each of these countries payment systems followed each model (government vs. private sector) and both have been successful. The U.S. must learn from these countries and incorporate the best features of these models in determining the new operating model for the U.S. payment system of the future.

Q5. The second desired outcome articulates features that are desirable for a near-real-time payments system. They include:

- a. Ubiquitous participation
- b. Sender doesn't need to know the bank account number of the recipient
- c. Confirmation of good funds is made at the initiation of the payment
- d. Sender and receiver receive timely notification that the payment has been made
- e. Funds debited from the payer and made available in near-real time to the payee

i. Do you agree that these are important features of a U.S. near-real-time system?

Yes, these would be good features; however the current digital landscape and in particular in the area of mobile, demands a real-time system. These systems exist today in many forms but all operate in niche or closed markets (no ubiquity). Leveraging the success of those networks that have a substantially lower cost of entry, are real-time, have lower fraud and are perceived to be secure by the public can be a catalyst to bring the U.S. closer to a real-time payment environment. These systems include:

- a. Pin debit networks
- b. ACH
- c. Wire (Real-time Gross Settlement –RTGS)

ii. **What other characteristics or features are important for a U.S. near-real-time system?**

Global interoperability and ensuring any system is developed around meeting the needs of conducting commerce in both the brick-n-mortar, person-to-person, mobile and virtual online environments. Lastly, simplicity must remain at the forefront wherever and whenever it can be introduced and maintained in the design of a new payment system.

Q6. Near-real-time payments with the features described in the second desired outcome could be provided several different ways, including but not limited to: a-e (see document)

1. **What would be the most effective way for the U.S. payment system to deliver ubiquitous near-real-time payments, including options that are not listed above?**

Payment choice and options must always remain at the forefront as the U.S. builds out the payment infrastructure of the future. Several simultaneous paths will have to be explored and implemented such that there is a primary and secondary solution to ensure security. This will be an evolving journey just as global commerce has evolved the exchange of value from bartering, to cash, to checks, ATM, wire, ACH, card- electronic payments and now mobile and virtual cash (BitCoin).

Leverage standards and technologies that have already been developed and proven to work efficiently, are highly accessible and secure by other countries across the globe taking the best features of those systems while ensuring that the U.S. End User remains at the center of our infrastructure development thought patterns.

The Clearing House and the Federal Reserve as being the only two ACH operators should collaborate to evolve the ACH network, which is one of the most efficient electronic funds transfer systems next to the Check. The network has global reach, efficiency of price, moves trillions of payments/dollars and is accessible. It has all of the features desired except validation of good funds, validation of account ownership and it is a batch system. In 2012 The Clearing House failed at developing a same-day ACH settlement structure and are now back at the drawing board. In 2010, the Federal Reserve instituted Same Day ACH settlement for debits only and in April 2013 extended this to include credit payments. This has gained little adoption amongst banks with only 31 participating today. The Fed should take a leadership role to move the industry to Same Day ACH settlement. Collaboratively they should work with the private sector Clearing House to solve for the “good funds” and “account” validation. These types of changes will move the payment system forward and can be done in less time while the market continues to develop other innovations in payment systems/products.

2. **What are the likely pros and cons or costs and benefits of each option? What rule or regulation changes are needed to implement faster payments within existing payment processing channels?**

The rules that limit payment type, monetary size and sector usage (consumer vs. business) such as in the ACH operating rules should be re-evaluated and measured against the risk management they purportedly provide in the wake of this new digital world. Opening up the parameters of usage will allow greater adoption of this low cost, accessible payment form. Increased fraud may materialize upon doing so, but new fraud tools will have to continue to be developed and evolved just as with any new payment type entering the market.

The pros of payment choice are the same as the underlining definition of a free market society and will allow for continued evolution in the U.S. payment system as new technologies unfold into the marketplace. It will also ensure continuous ubiquity within the payment systems because they will meet the needs being demanded by the consumer.

3. Is it sufficient for a solution to be limited to near-real-time authorization and confirmation that good funds are on their way, or must end-user funds availability and/or interbank settlement take place in near-real-time as well?

It is vital that the new payment system of the future operate in a real-time environment end-to-end for certain types of payments. In this new world order some existing legacy payment systems may cease to exist. Certain payment needs require different payment methods that ride across the same payment rails. Recurring, small – mid-dollar payments are efficiently processed, settled and cleared through the ACH network at a low cost to all participants. Large dollar and cross border payments are conducted through the Fed wire, Swift and CHIPS efficiently and in near-real-time but at a higher cost due to their inherent risks. Checks continue to exist because they are globally inclusive and universally accepted for payment of any type of goods and services. There will be a need in the new payments world for various types of payment methods such as these, however evolved to meet the needs of the new digitally connected society (consumer and business, land and virtual).

4. Which payment scenarios are most and least suitable for near real-time payments? (B2B, P2P, P2B, POS, etc.).

- Person to Person (P2P) payments are best suitable for a real-time environment where the sender and receiver exchange value in real-time and receives confirmation of such at the same speed.
- Business to Business payments for certain sectors of the economy can be best executed between all parties in a real-time or near real-time environment accompanied by payment remittance data. The speed of the payment will depend on the business sector need.
- Commerce at the Point of Sale (POS) in the consumer to business scenario will be best suited with a real-time environment for the end-user; however the sender and receiver banks may settle up and clear in near-real-time without any negative impacts.

- Small dollar payments will require payment and account validation in real-time however settlement and clearing may occur in near-real-time.
- Recurring payments (bill payment, direct deposit etc.) can benefit from real-time validation of good funds and accounts but may be conducted in near-real-time or continue in batch as they are conducted today.

Q7. Some industry participants have said that efforts to make check payments easier to use, such as by enabling fully electronic payment orders and/or by speeding up electronic check return information, will incrementally benefit the payment system. Others argue the resources needed to implement these efforts will delay a shift to near-real-time payments, which will ultimately be more beneficial to the payment system. Which of these perspectives do you agree with, and why?

As an industry, under the direction of the Federal Reserve, we must focus our resources on the ultimate solution with waypoints that incrementally enhance the current environment. Efficient resource allocation in an industry (financial services) that is already fiscally challenged in all but the largest institutions is paramount. We must pursue innovations that will move the U.S. forward in evolving the payment system and ensure efficiency, accessibility and domestic/global interoperability. The Federal Reserve Banks have been leaders in enabling the consumer check volume to shift to electronic presentment, clearing, return and settlement. As a result today nearly 98% of banks in the country participate in some form of image exchange of checks. The Fed should continue this effort to achieve the same results in the business check space where 6+ billion checks annually are written and remain in paper form. The resources to achieve this have the experience (consumer check initiatives) and the benefits to the payment system for all participants are substantial.

Q8. How will near-real-time payments affect fraud issues that exist with today's payment systems, if at all? The societal costs of fraud in payment systems today are substantial and growing. Fraud threats in the physical and online worlds are growing and this will continue. Near-real-time payments or in particular real-time payments can improve fraud in many of today's payment systems. Payment systems that are delayed or in batch experience a higher level of fraud due to timing delays in presentment, clearing and settlement. Speeding up the clearing and settlement to occur in near real-time identifies and reduces fraud in an almost equal amount of time allowing it to be thwarted quicker. It also arms the end-user with payment information in the near speed of light allowing Users to help in policing the increasing fraud threats in both the physical and online worlds.

- i. **Will near-real-time payments create a new fraud risk? If yes, please elaborate on those risks.**

As with any new technology or innovation and in particular around those that have significant monetary value, new fraud threats are developed in equal or an accelerated pace than that of the innovation. Fraud will remain a risk that must be managed and weighed against the societal benefit and cost to all for any new payment solutions or infrastructure architecture. Centralization and standardization will help to mitigate the fraud threat.

Q9. To what extent would a ubiquitous near-real-time system bring about pivotal change to mobile payments?

1. A ubiquitous near-real-time system would establish the foundation upon which new mobile innovations can begin to gain ubiquity for the societal or consumer problem that it is best suited to solve for.
2. It would also introduce a framework from which mobile innovations that have been developed or for new innovations to emerge that can begin to solve problems in conducting commerce on a bigger scale.
3. An evolved near-real time system could allow the industry to leap-frog technologies such as chip card and NFC for conducting payments in this next evolution of commerce and at higher price efficiency for all stakeholders.

	Desktop	Smart Phone	Tablet
Total Digital Commerce	90.40%	6.00%	3.50%
Apparel & Accessories	90.30%	6.20%	3.50%
Computer Hardware	94.50%	3.30%	2.10%
Consumer Packaged Goods	95.60%	3.00%	1.30%
Consumer Electronics	94.40%	2.60%	2.90%
Event Tickets	84.60%	10.90%	4.50%

Source: comScore Inc.

Q10. What would be the implication if the industry and/or the Federal Reserve Banks do not take any action to implement faster payments?

The U.S. has already begun to realize the implications of inaction in terms of:

1. Inability of U.S. citizens being able to conduct commerce in foreign countries and vice versa the diminished travel/foreign spending in the U.S.
2. Lost opportunity in global Trade opportunities
3. Increased threats of fraud and vulnerabilities in the existing payment structure. Fraud will follow the weakest link.
4. A failed market that leads to societal unrest due to decreased accessibility, inefficient price and the emergence of monopolistic entities thwart market innovation and evolution. When this occurs the Government has to step in to force the evolutionary innovation for the greater societal good.

Q11. To what extent will the industry need to modernize core processing and other backend systems to support near-real-time payments?

Many key sectors of the industry will need to make significant investments to modernize core processing and back-end systems to support this new modern world of technology. Typically core processing and backend systems with today's pace of technological advancement are looked at for re-investment on average every 7 -10 years. The substantial investment that will be required to overhaul some of these systems for processors, networks, financial institutions and merchants while continuing to run their businesses and maintain regulatory compliance will dictate the pace of these changes absent some incentives or legislative mandates that will force quicker movement to achieve this new payments environment.

- i. **What is the likely timeframe for any such modernization?** See above

Q12. Some industry participants suggest that a new, centralized directory containing account numbers and routing information for businesses and/or consumers, to which every bank and other service providers are linked, will enable more electronic payments. A sender using this directory would not need to know the account or routing information of the receiver.

- i. **What are the merits and drawbacks of this suggestion?**

A Central repository for account and routing information has merit in the B2B payment environment. The degree and frequency of change and security of non-public information would be difficult to construct and maintain in the general public (P2P, P2B, P2G) environment.

- ii. **What is the feasibility of this suggestion?**

It is highly feasible to mimic existing structures like this concept such as a database of individual and business payment information/account identifiers just as the Social Security number, Driver's License and Business Tax ID and/or EIN are maintained and used today to carry out a similar concept of identification. However emerging technologies in biometrics, using geo-location, mobile technologies (NFC/QR Code) and others can also possibly play a role in some form in this new payments environment.

Electronification

Q13. Some industry participants say that check use is an enduring part of the U.S. payment system and that moving away from checks more aggressively would be too disruptive for certain end users.

- i. **Is accelerated migration from checks to electronic payment methods a high-priority desired outcome for the U.S. payment system?** (Accelerated means faster than the current trend of gradual migration).

Yes, it should continue to be a high priority for the Federal Reserve Banks.

- ii. **Please explain, if desired**

Accelerating the migration from checks to other electronic payment methods should be a part of the strategy to move to a more efficient, speedier payment infrastructure. The

Federal Reserve Banks have innovated and performed a key role in decreasing the volume of paper checks to electronic image exchange and conversion to ACH in the consumer payment space. This leadership should be continued to speed up the reduction of the over 6 billion checks that continue to be issued in the business segment. The Federal Reserve should continue to be the catalyst to solve the remittance data issue for businesses while also continuing to use price efficiency to encourage usage of other more efficient payment forms. This transition will be most negatively impactful on the elderly who have historically been slow adopters of new technology. Programs, administered through market participants will be required to ease that transition.

- iii. **If yes, should the Fed establish a target for the percent of noncash payments to be initiated via electronic means, by a specific date? For example: “By the year 2018, 95% of all noncash payments will be made via electronic means.”**

As reported by the Federal Reserve in its 2010 Payments Study, 20% of non-cash payments today are made via an electronic means. In order to ensure continued migration and payment efficiency (reduced costs) a goal should be established to continue at least at this pace of migration.

- iv. **What is the appropriate target level and date?** What that percentage should be is difficult to predict, but should be attainable such as 90% by the end of the decade.

Q14. Business-to business payments have remained largely paper-based due to difficulties with handling remittance information. Consumer bill payments also are heavily paper-based due to the lack of comfort some consumers have with electronic alternatives. In addition, many small businesses have not adopted ACH for recurring payments due to technical challenges and/or cost constraints. The payment industry has multiple efforts underway to address these issues.

- i. **To what extent are these efforts resulting in migration from checks to other payment types?**

Emerging payment types introduced to address the merchant community by entities such as Square, Dwolla, Amazon and PayPal are starting to gain payment scale due to their simplicity and low-cost. However checks usage still remains high in the business sector due to the ubiquity and lack of education on the true business costs for using paper payment forms. The industry also has not completely solved for the payment and remittance data need conundrum for businesses, however several efforts are underway to address this critical problem..

The reported industry statistics show that nationally checks are declining by 10% while other forms of payments are increasing with the debit card growing by 10% surpassing the credit card for the first time beginning in 2010.

- ii. **What other barriers need to be addressed to accelerate migration of these payments?**
New payment systems must be open and ubiquitous like the check in order to provide a value proposition to displace the check or any other paper payment system to fulfill payment needs. Legislative agenda and the regulatory environment are often inhibitors to adoption of new technologies, new products and entry into new markets. Innovation is widely prevalent in the payments industry today, however acceptance and accessibility continue to be elusive.
- iii. **What other tactics, including incentives, will effectively persuade businesses and consumers to migrate to electronic payments?** Keeping it simple meaning driving out some of the complexity that exists in today's legacy payment environment from a technological and regulatory perspective. Learning from the relevant features of the advanced real-time payment infrastructures in place in the U.K.-Fast Payments, Africa-M-Pesa and Mexico-SPEI.

Cross-border Payments

Q15. To what extent would the broader adoption of the XML-based ISO 20022 payment message standards in the US facilitate electrification of business payments and/or cross-border payments?

The broader adoption of the XML-based ISO 20022 payment message standards in the U.S. would be a needle mover for the facilitation of business and foreign cross-border payments to an electronic format because it would establish a set of common syntax to be used for all payment forms and remittance data.

SEPA-Single Euro Payments Area euro payment market in the European Union has adopted the ISO 20022 message standards for financial supply chain communication amongst all players across all financial markets. As stated by the European Payments Council:

“ISO 20022 reflects the global nature of the financial services industry, bringing together diverse commercial and financial needs. ISO 20022 creates a level playing field empowering a broad group of stakeholders including end-users, suppliers and IT service providers to express their interests in a common work product whilst ensuring maximum transparency in the process. This cooperative and inclusive approach avoids a situation where multiple standards are developed by different groups in response to the same business need that may materialize in different areas or domains across the globe. At the same time, ISO 20022 supports multiple languages and character sets”.

The U.S. does not have to reinvent the wheel, but rather learn from other countries that have far surpassed the U.S. in their efforts to continually evolve the payment system to meet the evolving changes of how commerce is conducted on a national and global scale.

Q16. What strategies and tactics do you think will help move the industry toward desired outcome for consumers and businesses to have greater choice in making convenient, cost-effective, and timely cross-border payments?

Establishing a national/global standard for payments and payment related data such as the ISO 20022 in an XML format will solve for this and provide the openness required for new innovations to continually be developed that easily integrate and have global interoperability eliminating the need to completely overhaul the underlining infrastructure. The industry adapts to date-based mandates and while there would be a temporary outcry as is customary with any change, the benefits of a fixed date certain far outweigh the downside.

Safety

Q17. Payment security encompasses a broad range of issues including authentication of the parties involved in the transaction, the security of payment databases, the security of software and devices used by end users to access payment systems, and security of the infrastructure carrying payment messages.

- i. **Among the issues listed above, or others, what are the key threats to payment system security today and in the future?**
 - a. The threat of good funds and authentication of the sender, receiver and any intermediaries along the payment path.
 - b. Proliferation of payment systems to fund terrorist acts and to conduct illegal commerce in banded industries/countries.
 - c. Fraudulent exploitation of payment system vulnerabilities
 - d. The diminishing the U.S. dollar (symbol of value).
 - e. Public loss of confidence in the U.S. financial markets and payment systems
 - f. Financial market instability

- ii. **Which of these threats are not adequately being addressed?** The threats inherent in some of the most vulnerable payment systems today are in the offline open-loop electronic funds transfer networks. The councils formed such as the PCI Council to establish payment system standards to protect information software, hardware, during the transaction and upon storage of the transaction data are costly and have reduced fraud but not at the same pace that it continues to grow in this new digital environment. This environment has made the cost of payment efficiency very high. To address this in the U.S., a private payment system network led push to move the countries payment system to the EMV chip card security model for card present transacting like countries such as the U.K. Canada, Asia have done, is a substantial investment for all stakeholders and is believed that it will reduce fraud and improve security in the U.S. However, there are emerging technologies being developed by non-bank providers of payment services in the mobile environment that achieve the same goal at a lower cost but that do not have the desired open accessibility, yet.

The payment marketplace is current in flux which is natural where innovation is thriving, however it also creates uncertainty amongst participants/non-participants. Education

efforts have not been adequately addressed to show the value of the new payment types or to instill confidence in the security behind new innovations. As an industry this must be addressed to reach utopia (ubiquity).

- iii. **What operational or technology changes could be implemented to further mitigate cyber threats?** Leveraging the dynamic authentication features of chip card (EMV) when developing payment technologies in the mobile and online environments will provide a higher degree of security and add a degree of complexity towards combating fraud. This can be done without establishing a national mandate like Canada, Mexico and the U.K. did in their countries adoption/migration to EMV cards or liability shift tactics by the private sector payment system networks to encourage a full migration to EMV in the U.S.

Q18. What type of information on threat awareness and incident response activities would be useful for the industry?

- i. **How would this information be made available?**
Sharing of information and data in the fight against payment fraud and emerging societal threats is paramount to maintaining security and confidence within the U.S. payment systems. It has been very effective to date for associations and industry groups and forums to emerge to collaboratively share information at the global, state-to-state level and even local community/county/city levels in the ever growing battle to combat exploitation of system weaknesses and fraud. The Federal Reserve should share information and data with these groups to ensure that the entire payment ecosystem remains abreast of the fraud/threat environment and can continually develop solutions to combat it.

Q19. What future payment standards would materially improve payment security?

Using the XML and ISO 20022 standards would help towards improving the security of the current and newly developed payment system. Leveraging the dynamic authentication features of chip card standards would also materially improve payment security on a large scale. It will take the Federal Reserve to mandate certain standards for all parties in order to protect the entire payment system. Private sector providers of payment services to banks have established standards (PCI, etc.) for combating fraud however; it continues to proliferate in the U.S. payment systems.

- i. **What are the obstacles to the adoption of security-related payment standards?**
The primary obstacles are that there are too many standards issued by too many entities. Simply put there are too many rules that are not understood and some that are in conflict with each other making it difficult and complex to institute and maintain. The cost of maintaining security and compliance is extremely high and this particularly affects small business in the U.S. resulting in trade-offs of whether to spend to secure.

Fraud proliferates throughout the system if all participants are not working together to thwart it and where there is market confusion (lack of education).

Q20. What collaborative actions should the Federal Reserve Banks take with the industry to promote the security of the payment system from end to end?

The creation of industry partnership with government to continually share non security vulnerabilities and emerging threats would keep open communication across all ecosystem participants allowing the sharing of ideas, information, data and techniques to drive fraud out of the U.S. payment system and to ensure that a high level of security is maintained.

Q21. Please share any additional perspectives on U.S. payment system improvements.

The regulatory environment can be difficult to maneuver; this is where the Federal Reserve Board and Federal Reserve Banks have the opportunity to payment system participants navigate. The Fed can also be a more thoughtful in some of the regulations being mandated to limit unintended consequences to system participants and reduce costs of compliance for all to participate in the U.S. payment system. Some of the most recent unintended consequences as a result of the landmark 2010 Dodd Frank-Durbin Amendment include:

Fed Rules that create unintended consequences:

1. **Durbin - Reg II** – Extended interchange cap to prepaid card products for financial institutions where the underlining funds are not on the card itself (pseudo account or other). Three party systems (Discover and Amex) were exempted from Durbin altogether. This allowed the innovation of the Amex and Wal-Mart partnership for issuance of the Blue Bird Card that acts completely like a bank account with features such as direct deposit, P2P, check writing, RDC, card payments, other FI account linkage, bill payment with no fees and no required adherence to typical bank governance rules.
2. **Durbin Interchange Cap-FI's \$10B or more** – unintended consequence – FI's less than \$10B experienced reduced interchange as well. Visa creation of the PAVD transaction that redirected FI PIN debit transaction activity to Visa signature rails. As a result, FI's transaction expense increased and interchange decreased while fraud expense/ experience increased which is typically in a signature debit environment.
3. **Small ticket transactions for FI's >\$10B** doubled in expense under Durbin – went from 1.44%+\$0.04 to a fixed \$0.21+.05% regardless of the size of the transaction severely hitting small micro businesses.
4. **Visa creating and leveling a new FANF** fee on merchants to recover some of the lost revenue from the two unaffiliated network rule that was part of the Durbin Amendment – Regulation II.
5. **Consumer didn't win** -One year after the Durbin Amendment implementation reducing interchange rates by more than 50% on financial institutions \$10B or more, the passing of that reduction onto merchants has not to date resulted in any savings being passed down to the consumer in terms of lower prices.

6. **Merchant routing choice** -Debit processing networks have yet to figure out a way to route chip transactions (EMV) and still comply with the so-called Durbin Amendment that regulates interchange rates and establishes the rule for merchant transaction routing choice (two unaffiliated networks). The rule is counter to the fundamental technology behind (architecture) a chip card where the Issuer establishes what single network (Application Identifier –AID) it is going to participate in.

A pivotal point for the industry will be the outcome of the pending challenge to the Federal Reserve’s standards developed around interchange price caps and merchant routing choice as part of the Dodd Frank-Durbin Amendment. The outcome of Judge Leon’s decision in the Federal Reserve’s Board defense of the new rules of play for the debit card will potentially have sweeping detrimental effects on the payment industry further eroding income relied on for payment innovation for financial institutions. This is a key decision and the outcome will determine the role that the Federal Reserve can play in the future of the digital payment system. The Federal Reserve should be careful to remain neutral and not be influenced by the interchange changes proposed currently in the U.K. and those implemented in Australia when determining the efficiency (price) of the U.S. payment systems. Although much can be learned from other countries, the U.S. is unique. All industry eyes on upon the Fed as this regulatory speed bump plays out.

